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DOE-DNA	TP	B57-531
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TECHNICAL MANUAL

NUCLEAR WEAPONS RETROFIT ORDER

ALT 914 (U)

PARAGRAPH CLASSIFICATION:	Pursuant to and in accordance with special authorization granted by the Director, Information Security Oversight Office, this technical publication is not portion marked as otherwise would be required by DOD 5200.1-R. This publication will not be used as a security classification guide with respect to its content nor as an approved source for arriving at classification determinations.

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DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW

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DOE - Sandia National Laboratories, Albuquerque

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Total number of pages in this manual is 16, consisting of the following:

Page No.	Change No.
Title	Original
A	Original
i and ii	Original
1 thru 11	Original
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SAFETY PRECAUTIONS

ELECTROSTATIC SENSITIVE DEVICES (ESSD).

The B57 contains ESSD's which are sensitive to static electricity. When these devices are exposed to electrostatic discharge, personnel safety and/or weapon function may be affected. These devices may be either electroexplosive devices (EED) or nonexplosive devices. Failure to equalize body potential with that of the weapon or component, as directed in this manual, may activate or damage the ESSD's. Do not touch the electrical connector pins or connector sockets.

If operations being carried out under ESSD Warnings are interrupted and/or actions are taken that may build up static electricity, personnel must equalize their body potential with that of the weapon or component before resuming operations.

Refer to TP 35-51 for information on Protecting Electrical Connectors.

HAZARDOUS EXPENDABLE MATERIALS.

Procedures in this manual require the use of hazardous expendable materials. These hazardous expendable materials are identified in the text by (HM). The user must be familiar with (or refer to) the Material Safety Data Sheet (MSDS) and applicable OSHA regulations (as implemented by Service policies) for each hazardous expendable material used in the day's operation. The using organization shall determine what, if any, additional protection is required. However, all regulatory standards must be met.

Hazardous expendable materials may be additionally identified in the text by (HM)(F). These materials are flammable. The user must be familiar with (or refer to) the manufacturer's MSDS, OSHA regulations, and local regulations (as implemented by Service policies) for proper use procedures.

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SECTION 1

GENERAL

1-1 PURPOSE.

1-1.1 This retrofit order provides procedures to improve shipment safety of B57 bombs.

NOTE

ALT 914 is reversible. Procedures for reversing ALT 914 will either be provided in a technical manual, or the ALT will be reversed by DOE personnel using special repair procedures.

1-1.2 This retrofit will be performed on all B57's before shipment by air.

1-2 COMPLIANCE REQUIREMENTS.

1-2.1 BY WHOM WORK WILL BE ACCOMPLISHED. The work required by this retrofit order will be performed by Service and DOE team personnel (where applicable) at all locations having B57's.

1-2.2 WHEN WORK WILL BE ACCOMPLISHED. This retrofit will be completed before air shipment of any B57 and following receipt of this manual by the organization possessing the bomb.

1-2.3 MAN-HOURS REQUIRED. Retrofit of a single B57 requires approx. 1 hr, not including preparation time.

1-3 RECORDING AND REPORTING REQUIREMENTS.

Accomplishment of this retrofit will be reported and recorded using appropriate Service procedures. For Navy, refer to SWOP 1-2.

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1-4 PROJECT NUMBER

1-4.1 The project number for this retrofit is Product Change Proposal number 2-92.

1-4.2 Reporting will reference TP B57-531.

1-5 WEIGHT AND BALANCE INFORMATION.

The weight and balance change resulting from performance of this retrofit is negligible.

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SECTION 2

SUPPLY DATA

2-1 TP MANUAL.

Performance of this retrofit requires reference to TP B57-1.

2-2 PARTS AND MATERIALS.

2-2.1 STENCILING MATERIALS. Service will provide materials required for stenciling ALT number (par. 3-3.1).

2-2.2 OTHER PARTS AND MATERIALS. The DOE team will furnish all other parts and materials required to perform this retrofit. Table 2-1 lists connector covers required to perform the retrofit, and table 2-2 lists required expendable materials.

2-3 TOOLS AND EQUIPMENT.

2-3.1 SERVICE PERSONNEL. Refer to Special Equipment listing in TP B57-1 for tools required to perform this retrofit.

2-3.2 DOE TEAM. The DOE team will equip themselves with tools and materials required to perform procedures in par. 3-2.

2-4 DISPOSITION OF REMOVED PARTS.

No parts are removed from the B57 when performing this retrofit.

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TABLE 2-1

CONNECTOR COVERS

ITEM	PART NO.	QUANTITY

TABLE 2-2

EXPENDABLE MATERIALS

ITEM NUMBER	NOMENCLATURE
299	Lacquer (black lusterless) (HM)(F)
532	Textile tape

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SECTION 3

MODIFICATION DATA

3-1 PRELIMINARY OPERATIONS.

NOTE

- This retrofit is performed (where applicable) with B57's in two-high stack in H1012 Hand Truck. Do not unstack bombs.
- Service personnel perform procedures in section 3-1.

3-1.1 MONITOR READY-SAFE SWITCH. Check position of ready-safe switch by looking through forward observation window in center bomb subassembly. The ready-safe switch should be in S (green) position. If ready safe-switch is in R (red) postion, remove SEP (par. 3-1.2), if installed, and reject B57.

3-1.2 REMOVE MC1386 STRIKE-ENABLING PLUG (SEP). Check for presence of SEP by looking through aft observation window in center bomb subassembly. If SEP is installed, remove it as follows.

a. Remove observation window assembly using 1-1/4-in. socket wrench installed on inverted nut.

b. Grasp SEP and pull out to remove.

c. Reinstall observation window and tighten securely.

NOTE

SEP is not reinstalled as long as bomb remains ALT 914.

d. Package SEP according to TP B57 procedures for Packaging Strike-Enabling Plug.

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3-2 REWORK.

WARNING

Failure to perform tritium monitoring procedures as described in par. 3-2.1 may result in undetected exposure to trituium.

NOTE

DOE team performs procedures in section 3-2.

3-2.1 TRITIUM MONITORING. DOE team personnel will monitor for tritium while performing procedures in par. 3-2.2 using DOE-provided equipment and the following procedures.

a. At the start of each day's operation, monitor bunker atmosphere to determine background natural activity.

b. At the start of each bomb operation, monitor the area of the access door. If tritium contentrations exceed 50 microcuries per cubic meter ($\mu Ci/m^3$), proceed with panel removal while monitoring (1) breathing zone of technician performing operation and (2) panel seal area.

c. If tritium concentration rapidly increases upon removal of access panel, perform the following, as applicable.

(1) If atmosphere at access panel location is less than 100, 000 $\mu Ci/m^3$, continue to work as long as breathing zone levels remain below 50 $\mu Ci/m^3$.

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NOTE

Following actions are based on assumption there was a build up of tritium in the center bomb subassembly.

(2) If breathing zone levels exceed 50 $\mu Ci/m^3$, but are less than 500 $\mu Ci/m^3$, reinstall access panel (par. 3-2.4), retreat from the immediate area, and continue to monitor bunker atmosphere. Observe monitors from a distance to determine if tritium concentration is decreasing. When tritium concentration becomes less than 50 $\mu Ci/m^3$, reenter area and again remove access panel. If tritium concentration again exceeds 50 $\mu Ci/m^3$, but does not increase rapidly, leave panel off and allow center bomb subassembly to ventilate. Resume operations when ventilation reduces levels below 50 $\mu Ci/m^3$.

(3) If breathing zone levels increase rapidly and exceed 500 $\mu Ci/m^3$, evacuate area immediately (do not reinstall access panel). From a distance, observe whether tritium concentration is still increasing. If it is, evacuate the bunker and allow time for the tritium to ventilate.

3-2.2 REMOVE ACCESS PANEL. Perform the following.

a. Remove eight machine screws that secure access panel door to center bomb subassembly.

b. Remove access door and gasket. Use tools for tapping and prying as required. Retain screws, door, and gasket for reinstallation.

3-2.3 DISCONNECT CABLES. Perform the following.

WARNING

Failure to equalize body potential where indicated, or touching connector sockets, may activate an ESSD and cause personal injury or loss of life. This warning applies to procedures in steps b through g. Reequalization is required after interruption of procedures.

a. Equalize body potential with that of center bomb subassembly by touching bare metal inside access area.

b. Disconnect P15 of MC1814 Interconnecting Box pigtail (P13 on Mod 1, ALT 259) from J2 of MC1391 Thermal Fuse Pack (fig. 3-2). Use connector pliers as necessary.

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Washington, D.C., 27 April 1992

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MICHAEL W. CLAYBURN
Commander, United States Navy
Naval Liaison Officer, JNWPS

J. T. HOOD
Rear Admiral, United States Navy
Deputy Commander
Naval Sea Systems Command

OFFICIAL:
CHARLES C. McDONALD, General, USAF
Commander
Air Force Logistics Command

MERRILL A. McPEAK, General, USAF
Chief of Staff
United States Air Force

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MACK C. GASTON
Rear Admiral, United States Navy
Commander, FCDNA

GERALD G. WATSON
Major General, United States Army
Director

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Manager, Albuquerque Operations
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